Branching ratio for the superallowed beta-decay of $^{10}$C TOMMI ERONEN, M. BENCOMO, L. CHEN, J.C. HARDY, V. HORVAT, V. IACOB, N. NICA, H.I. PARK, B. ROEDER, A. SAASTAMOINEN, Cyclotron Institute, Texas A&M University, College Station, Texas — Superallowed $\beta$ decays play a key role in testing the Standard Model of Particle Physics. These decays occur between nuclear analog states having spin-parity of $0^+$ and isospin $T = 1$. Currently, and in the foreseeable future, they offer the most accurate value for the $V_{ud}$ matrix element of the Cabibbo-Kobayashi-Maskawa quark mixing matrix. Each superallowed transition is characterized with an $F_t$ value combining both experimental and theoretical quantities. We have just made a preliminary new measurement of the $^{10}$C branching ratio, which currently is the least precisely known quantity for any of the “traditional nine” superallowed transitions. Furthermore, $^{10}$C is the only case that appears to have its corrected $F_t$ value outside the world average value, which could be explained with the existence of a scalar current. We performed the branching-ratio measurement with a $\beta-\gamma$ coincidence setup using a scintillator for $\beta$ and an HPGe with $\pm0.15\%$ calibrated relative efficiency for $\gamma$ detection. Since the branching ratio is obtained from the ratio of intensities of 718 keV and 1022 keV $\gamma$ lines, most systematic uncertainties cancel out. I will show an overview of the experiment and preliminary results.